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VIA ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, DC 20554

EX PARTE

Re: Dockets 17-79 and 17-84

Dear Ms. Dortch:

On July 12, 2018 the Commission released for public comment a draft Third Report & Order and Declaratory Ruling ("Draft") in the above proceedings.¹ This *ex parte* filing is in response to that request for comments. Marcus Spectrum Solutions, LLC ("MSS") has been an active participant in this proceeding with both written filings and meetings with staff. MSS fully supports the goal of rapid implementation of 5G with both timely FCC spectrum regulations and minimizing barriers to infrastructure rollout. Since most increases of capacity in the cellular industry has come from new infrastructure with closer spacing which enables frequency reuse, not new spectrum or new technology, it is critical that this infrastructure get built in a timely and cost effective way. Our filings have differed from the industry proponents only in pointing out that this can be done and should be done without creating massive ugliness in neighborhoods throughout America.

While 5G will generally result in lower base station heights throughout populated areas and traffic corridors with high densities of traffic it will also result in a high density of "small base stations" with heights of 7- 15m. It is unclear how many, but the total number of new base stations required has been estimated by industry initially as 400,000 and more recently as 800,000.

While industry correctly point out that these will not be as massive structures as the full size base stations which have been dominant in the past, they also pose new visual design challenges for two reasons:

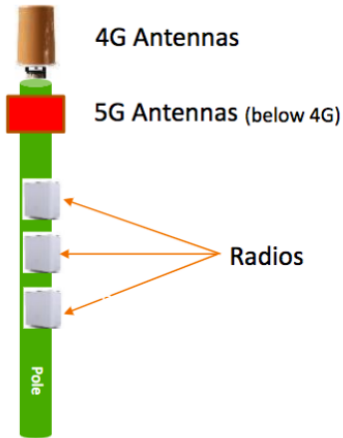
- 1) The electronics packages on the small base stations will be near eye level
- 2) The antenna(s) at or near the top of the structure must be connected by cables to the electronics packages.

¹ <https://docs.fcc.gov/public/attachments/DOC-352544A1.pdf>

Typical Urban Deployment

4G Antennas: $\approx 3 \text{ ft}^3/\text{ea}$

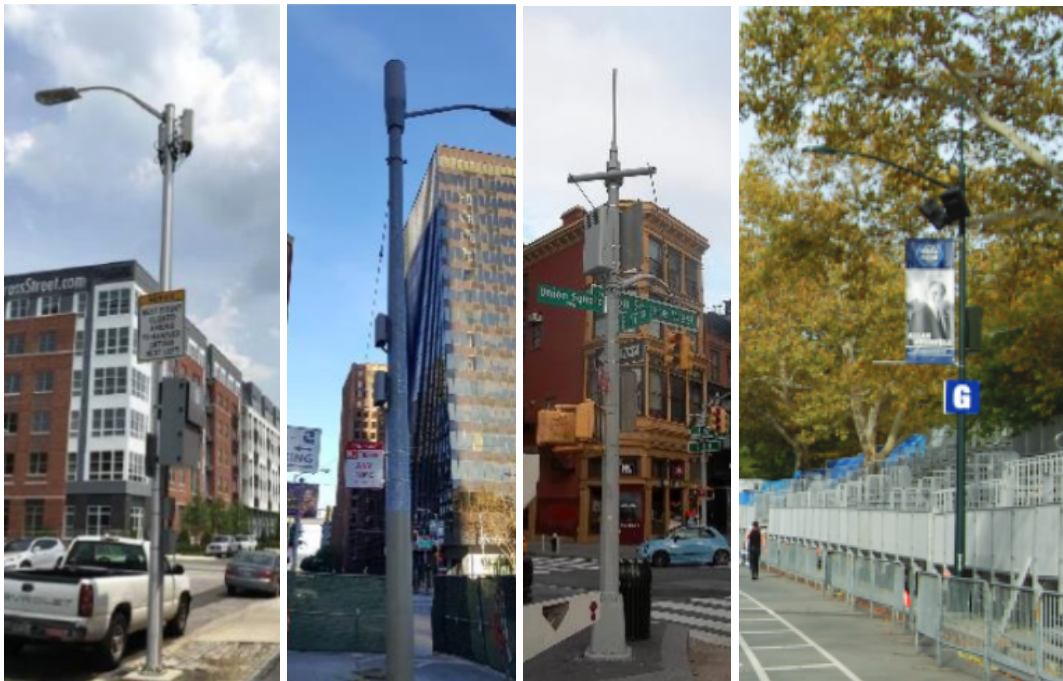
5G Antennas: $< 3 \text{ ft}^3/\text{ea}$



These points are shown in the diagram at left submitted into the record by AT&T.² Today's small base station antennas are generally designed with aesthetics in mind and are reasonable attractive - unlike the massive arrays of antennas with disparate designs on traditional full size base stations. However there are electronics packages, here labeled "radios", that must also be mounted. More importantly these must be interconnected.

If the Commission reviews photographs or sketches of small base station designs submitted in this proceeding and in numerous tweets by cellular industry participants, it is clear that essentially all of the small base station depicted are new construction on hollow metal poles and in many cases the electronics packages/"radios" are not even visible because they are mounted inside the hollow metal pole yielding a quite attractive installation. These are also the types of

installations that industry invites FCC commissioners and senior staffers to for "photo ops". Examples from filings in Docket 17-79 are shown below:



By contrast, we have identified many existing small base stations that can only be described as needlessly messy and incompatible with their surroundings. We have

² AT&T *ex parte* filing, February 23, 2018, Docket 17-79 (<https://ecfsapi.fcc.gov/file/1022359695070/2018-02-23%20-%20ATT%20Ex%20Parte%20-%20WT%2017-79.pdf>)

included some of these in previous filings in this proceeding and in our own tweets. Below are samples of small base station implementations very much unlike designs that have appeared in industry filings:



Upon further consideration and discussion with industry insiders it became clear that one major different between these two sets of photos is not just the ugliness of the second set, but that the second set all involve mounting small base stations on existing wooden utility poles. A review of industry filings shows virtually no examples of wooden utility poles and the only one that we found was taken at such a distance that the design of the cabling is not apparent.³

The draft agenda item at issue here deals with OTMR

"a new pole attachment process that new attachers can elect that places them in control of the surveys, notices, and make-ready work necessary to attach their equipment to utility poles."⁴

MSS fully supports this new procedure and its prompt implementation.

However, we urge the Commission and the commissioners to take this opportunity to explicitly tell the industry that their current practices of sloppy construction on existing utility poles, particularly wooden poles where internal mounting and cable routing is not feasible, risks the real possibility of a public backlash. Former FCC Chairman Charles

³ *ibid.* at pdf p. 8

⁴ Draft at para. 16

Ferris was a protege of former House Speaker Thomas P. "Tip" O'Neill. Those of us who worked under Chairman Ferris recall well O'Neill's truism , "**All politics is local**". The construction of massive numbers of messy small base stations on existing utility poles on our country's streets has a high likelihood of a grass roots backlash in both parties against high handed practices by the cellular industry which could actually hurt the 5G rollout.

Regulation is not the answer. Regulating aesthetics in governmental actions is most likely not effective. But the messy small base stations shown above were built in an era when local governments had some design oversight. It is clear that new legislation adopted in a number of states have removed all local design oversight if volumetric limits are met. While this legislation is explained by industry as necessary to speed approvals and limit excessive fees charges by local governments, industry has been quiet about the provisions that remove all local design oversight. For example consider Arizona House Bill 2365 enacted by the Legislature in 2017.⁵ While this bill has the usual provisions to facilitate access to poles and limit fees, Sections 9-592(I,J) have the following provisions:

I. SUBJECT TO SUBSECTION K, PARAGRAPH 2, SUBDIVISION (c) OF THIS SECTION, A NEW, REPLACEMENT OR MODIFIED UTILITY POLE THAT IS ASSOCIATED WITH THE COLLOCATION OF SMALL WIRELESS FACILITIES AND THAT IS INSTALLED IN THE RIGHT-OF-WAY IS NOT SUBJECT TO ZONING REVIEW AND APPROVAL UNDER SECTION 9-594 IF THE UTILITY POLE DOES NOT EXCEED THE GREATER OF EITHER:

1. TEN FEET IN HEIGHT ABOVE THE TALLEST EXISTING UTILITY POLE, OTHER THAN A UTILITY POLE SUPPORTING ONLY WIRELESS FACILITIES, THAT IS IN PLACE ON THE EFFECTIVE DATE OF THIS SECTION, THAT IS LOCATED WITHIN FIVE HUNDRED FEET OF THE NEW, REPLACEMENT OR MODIFIED UTILITY POLE AND THAT IS IN THE SAME RIGHT-OF-WAY WITHIN THE JURISDICTIONAL BOUNDARY OF THE AUTHORITY, BUT NOT MORE THAN FIFTY FEET ABOVE GROUND LEVEL.

2. FORTY FEET ABOVE GROUND LEVEL.

J. NEW SMALL WIRELESS FACILITIES COLLOCATED ON A UTILITY POLE OR WIRELESS SUPPORT STRUCTURE IN THE RIGHT-OF-WAY ARE NOT SUBJECT TO ZONING REVIEW AND APPROVAL IF THEY DO NOT EXTEND MORE THAN TEN FEET ABOVE THE UTILITY POLE OR WIRELESS SUPPORT STRUCTURE AND DO NOT EXCEED FIFTY FEET ABOVE GROUND LEVEL.

These are volumetric exclusions from all local government oversight. There is now no local oversight in Arizona for construction no more than 10' above a pole and less than 50' off the ground. We have reason to believe that many of the other bills passed by state legislatures after industry lobbying have similar volumetric restrictions on local oversight.

Pragmatically, will such removal of local oversight help or hurt the likelihood that utility pole based small base stations are reasonably designed for their locations?

⁵ <https://www.azleg.gov/legtext/53leg/1R/laws/0124.pdf>

Our solution is not regulation, rather pressure from the Commission and commissioners to remind industry of the pragmatic importance of making reasonable design decisions and maintaining quality control over the actual construction of small base stations. Usually this construction is done by carriers' contractors and subcontractors with the focus on cost control and speed. Is there any consistent carrier review of the final product for compatibility with its environment?

For example consider this small base station with a "rat's nest" of wires a few meters away from a "Scenic Byway" sign on MacArthur Blvd. in Potomac Md. Note also the several colors used for the boxes containing the electronics packages used. If this is what industry builds with local government oversight, are they set to do a better job when the oversight is totally eliminated?



We ask that the commissioners consider two actions - neither of which are regulatory:

- 1) Amend the concluding sections of the draft to make clear that the new freedom given carriers should be used responsibly and that carriers that continue to build large numbers of small base stations that are not visually compatible with their

locations face a real risk of a backlash from the neighbors of such base stations and a rollback of the deregulation they have sought at the state and federal level.

2) Commissioners in their meetings with industry representatives and in their speeches at industry events should remind that the industry has been a great beneficiary of FCC actions that have changed long standing spectrum policies to their benefit and which have been implemented at speeds that have been difficult to achieve given the present resources available at FCC. **But to those to whom much is given, much is expected.** The industry should no squander this opportunity through massive messy construction on existing utility poles. It needs a coherent design process for building small base stations on existing poles and a real quality control process for the end product. The following set of principles comes from Crown Castle, a major contractor for infrastructure, in a Docket 17-79 filing⁶:

Discreet, innovative technology

We provide shared infrastructure that gives you the wireless service you've come to depend on—all while blending in with your environment.

Community Outreach

Our community outreach team develops community-friendly solutions and proactively meets with residents to make sure their concerns are heard.

Collaboration

We involve residents and municipal partners in every major decision so everyone has a say in the solutions that are deployed.

Should the industry as a whole have a comparable set of principles as it implements the vital 5G rollout? While a "Vast Wasteland" speech is not yet needed here, supportive feedback from commissioners and senior WTB staffers should tell industry they have a problem here and should work to solve it before it blows up in their faces.

⁶ Crown Castle *ex parte* filing, November 10, 2017, Docket 17-79 (https://ecfsapi.fcc.gov/file/1110226657475/2017-11-10%20Crown_Castle_Ex_Parte_-_Peraertz.pdf)

We support the timely implementation of 5G and the general provisions of the draft 3rd R&O. Regulations are not the answer to the problems of visual design, but industry attention is.

The occasion of the adoption of this draft will be a key opportunity for FCC leadership to make clear to the cellular industry that they must act responsibly in rolling out vast numbers of small base station across the US and that adding small base stations to utility poles -- particularly wooden poles -- the subject of the OTMR action in this draft, has been a major design problem area in the past that must be corrected by the industry in a timely way.

Sincerely,

/s/

Michael J. Marcus, Sc.D., F-IEEE
Director

cc: Michael Carowitz, Erin McGrath, Will Adams, Umair Javed
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